

REMARKS

The Office Action of June 29, 2006 has been received and carefully reviewed. By the above amendment, claims 1-15 have been cancelled without prejudice or disclaimer, and new claims 16-31 have been added, whereby claims 16-31 remain pending in the subject application. Applicants note the objection to claims 6-8 and the indication in the Office Action that these claims would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims. Reconsideration of pending claims is respectfully requested in view of the following remarks.

I. OBJECTION TO CLAIM 1

Claim 1 was objected to for misspelling of the word protuberant. This word has been correctly spelled in the above new claims 16, 17, 20, and 21, whereby the objection has been addressed.

II. CLAIM REJECTIONS

Claims 1, 2, and 12 were rejected under 35 U.S.C. §102 as being anticipated by Chien 5,806,960. Claims 3-5 were rejected under 35 U.S.C. 103(a) as unpatentable over Chien as applied to claim 1 and further in view of Daniel 4,667,274. Claim 9 was rejected under 35 U.S.C. 103(a) as unpatentable over Chien 9/1, 9/2 or Chien and Daniel as applied to claims 1-5, and further in view of Kotary 6,554,447. Claims 10 and 11 were rejected under 35 U.S.C. 103(a) as unpatentable over Chien, Daniel, and Kotary as applied to claims 1-5 and 9 above, and further in view of Chien 5,806,960. Claim 13 was rejected under 35 U.S.C. 103(a) as being unpatentable over Chien ('960) as applied to claim 1 above, and further in view of Dugmore (US Patent 6,457,838). Claim 14 was rejected under 35 U.S.C. 103(a) as being unpatentable over Chien and Daniel as applied to claims 1-5 above, and further in view of Chien (US Patent 5,479,325). Claim 15 was rejected under 35 U.S.C. 103(a) as being unpatentable over Chien and Daniel as applied to claims 1-5 above, and further in view of Appiah (US Patent 6,752,510). By the above amendment, claims 1-15 have been cancelled without prejudice or disclaimer.

III. NEW CLAIMS 16-31

New claims 16-31 are believed to be patentably distinct from these references, as discussed further hereinafter.

In accordance with the indication in the Office Action that claims 6-8 would be allowable, new claims 20 and 21 generally correspond respectively to previous claims 6 and 7, and have been rewritten to include the limitations of the base claim and any intervening dependent claims, whereby these claims are believed to be allowable. In these claims, moreover, the word "releasable" has been deleted as representing a non-essential limitation not required to distinguish the record art. In this regard, the attachment means described for example at page 9 lines 1 – 17 (high strength adhesive tape, gluing, or welding) might equally well be applied to the baseplate of the indicator as to a cooperating thin magnetic element, so as to permanently mount the indicator on a helmet if required in a particular application. In this respect, the subject matter of the new claims 20 and 21 is broader than the original claims 6 and 7, respectively. In addition, new claim 22 corresponds generally to previous claim 8 (without the attachment means being limited to releasable attachment means), and depends from new independent claim 21. The new claims 20-22 are thus believed to be in condition for allowance and notice thereof is respectfully requested.

New independent claim 16 provides an electroluminescent position indicator for mounting on a helmet, and generally corresponds to original claims 1 and 2, without requiring "releasable" attachment means. The indicator comprises a body with a protuberant diffuser defining a cavity containing the light source and the power supply means. With respect to original claim 2, the Office Action asserts that "Chien teaches that the diffuser (Figure 1: 2) defines a cavity (behind 2) containing the light source (4) and the power supply means (9)". Applicant respectfully disagrees, and notes that the power supply components 9, 5, 7 of Chien (Fig. 1) are housed in the lower housing 1, rather than in the cover 2. The transparent cover 2 extends outwardly from the lower housing 1 to form a cavity behind it, which however does not contain the power supply components. In particular, Chien provides at col. 5, lines 14 et seq., "The lower housing 1 includes battery contacts 8 for conventional dry cell batteries 9 and means for mounting the circuit board 3..." Thus, the power supply components of Chien are contained in the lower housing, not in any purported cavity formed by the cover 2. This

feature of Applicant's position indicator, moreover, advantageously allows the entire visible surface of the indicator to be illuminated, while housing the power supply components within the indicator. Accordingly, the indicator does not compromise the protection afforded by the helmet and, depending on the field of application, the entire indicator can be arranged to detach automatically in the event of an accident. Conversely, Chien appears to only provide an illuminated cover mounted on a non-illuminated body portion containing the power supply, for example, such as the lower housing 1 in Fig. 1, which is roughly the same depth as the transparent cover 2; and the lower and upper housings 50, 51 in Fig. 5, which are much larger than the lens member 52. Thus, even if embodiments of Chien were modified for attachment to a helmet, a substantial portion of the light source would not provide illumination. Chien therefore fails to teach or otherwise suggest a diffuser which defines a cavity containing the light source and the power supply means as set forth in claim 16.

New independent claim 17 corresponds generally to original claims 1 and 3 (without any requirement that the attachment means be releasable), wherein new claim 17 further specifies a convex reflector spaced apart from the diffuser so as to more clearly distinguish the structure of Chien. In this respect, the diffuser and the reflector are spaced apart in claim 17, they are distinct elements. In the present application, reflector (62, 84) is separate from the diffuser, and the electroluminescent element is mounted therebetween. The outer reflective surface of the reflector, moreover, is convex and is described at page 5, lines 5-8 as comprising a generally outward, protuberant curvature, where the reflector functions to distribute light from the electroluminescent element over the inner surface of the diffuser (*e.g.*, page 13, lines 8-14).

Chien fails to teach or suggest such a convex reflector as set forth in new claim 17 and dependent claims 18 and 19. For example, Fig. 1 and the description at col. 5, lines 33-44 of Chien indicate that the cover 2 has "means for providing various optical designs including a reflective portion 16", and Chien states that "the optical design means may also include ... a partially reflective portion...". Fig. 1 of Chien shows reflective portion 16 as part of the outer surface of the cover 2 through which the light is emitted, where this part 16 is not itself convex, but instead appears flat. Therefore, the optical design means of Chien is included in the cover 2, and hence any partially reflective portion thereof (which is not illustrated in Chien), must also form part of the

cover 2. As a result, Chien does not teach or fairly suggest a convex reflector according to claim 17, and Chien moreover, fails to disclose a reflector which is spaced apart from the diffuser as claimed. Consequently, the reflective or partially reflective portions of Chien are neither structurally nor functionally equivalent to the separate, convex reflector of the present invention. In particular, the function of the reflective and partially reflective portions of the transparent cover 2 is described variously as being to "enhance the visibility and/or attractiveness of light emitted by the electro-luminescent panel 4", and for "optically varying light passing through a transparent material". It is not evident from the drawings and description how the reflective and partially reflective portions could in any way function to distribute light over the interior surface of the transparent cover 2, of which they form an integral part. Hence Chien also does not disclose a reflector for distributing light from the first electroluminescent portion over the diffuser, as in claim 17.

The Office Action further cited to Daniel with respect to original claim 3. Daniel provides a back reflector 28 shown in Fig. 2 and in the sectional views of Figs. 3-5, whose reflective side curves rearwardly from the frame 16 so as to form a hollow which contains only the bulb 50 and its socket 48. This structure provides "substantially uniform light distribution from a point light source throughout the cavity defined by the back reflector" (Daniel col. 3, lines 55-63). The reflector of Daniel is therefore clearly a concave reflector rather than a convex reflector, as those terms are defined in the present specification at page 5, lines 6-8, having a generally inward curvature so as to form a hollow. The light in Chien is distributed throughout the concave cavity. Concave reflectors are typical in flashlights, vehicle lights and numerous other applications, and the reflector of Daniel is similar to these, being distinguished only in that it has a compound curvature, with a relatively flat central section (col. 3, line 63 et seq.). Daniel, therefore, fails to teach or fairly suggest an electroluminescent light source, and further, like Chien, Daniel fails to disclose a convex reflector as recited in claim 17.

Thus, unlike the cited references, the position indicator of new independent claim 17 provides an unusual and counterintuitive convex structure, entirely different from either Chien or Daniel, i.e. a reflector whose front reflecting surface has (as defined at p.5, lines 6-8) a generally outward, protuberant curvature, with the light source arranged between the diffuser and the convex surface of the reflector. This structure recited in claim 17 advantageously facilitates the further distinguishing features of the claims

dependent from independent claim 17, and further provides the advantages of substantially the entire visible surface of the indicator being illuminated, while the power supply components are entirely contained within the indicator, as mentioned above in connection with new independent claim 16. Applicant notes in this regard that neither Chien nor Daniel disclose a reflector with a convex reflecting surface having a generally outward, protuberant curvature, and thus neither reference achieves both of these advantages. In this respect, the power supply components of Chien are located in a non-illuminated body portion, whereas in Daniel the battery unit 56 is mounted "on the panel 6 of the cap above the back reflector 28, or, as shown in Fig. 3, the battery can be mounted upon the upper cross bar 18 of the frame 16" (col. 5, lines 21-25). Thus, an attempt to combine the concave reflector of Daniel with the safety light of Chien would merely provide a concave reflector defining a cavity between the reflector and the cover, an electroluminescent light source within that cavity, and a non-illuminated body portion positioned behind the reflector and containing the power supply components. This proposed combination of Chien with Daniel therefore would not result in the structure of new claim 17 and would not realize the key advantages thereof. Accordingly, new claim 17 and the associated dependent claims are believed to be patentably distinct from the cited art, and favorable consideration thereof is respectfully requested for at least these reasons.

New claim 18 depends from independent claim 17, and generally corresponds to original claim 4. With respect to claim 4, the Office Action asserts that Chien teaches a reflector (Figure 1:16) defining a cavity (behind 16) containing the power supply means (9). Applicant again notes, however, that Chien provides reflective or partially reflective portions which appear to be flat and which form a part of the outer surface of the transparent cover 2, where the power supply components (9, 5, 7; Fig. 1) are housed in the non-illuminated body portion 1. Thus, as discussed above in connection with independent claim 16, to the extent that Chien defines a reflector at all, that reflector does not define a cavity; and, to the extent that the transparent cover 2 of Chien may define a cavity, such cavity does not contain the power supply means, whereby the subject matter of new claim 18 is believed to be in condition for allowance for this additional reason, and favorable consideration thereof is respectfully requested.

New claim 19 also depends from claims 17 and 18, and is therefore allowable for the reasons discussed above. This claim generally corresponds to original claim 5, for

which the Office Action cited to Chien and Daniel and noted that Chien fails to teach a diffuser that defines a cavity containing a reflector. Applicant notes, however, that Daniel likewise fails to disclose a diffuser that defines a cavity which contains the reflector. In particular, Fig 2 and col. 6, lines 10-12 of Daniel provides that the diffuser sheet 40 is merely attached to the reflector unit 28. This arrangement is shown in vertical and horizontal sections of Figs. 3 and 4, respectively, from which it is clear that the central section 30 of the back reflector 28 in Daniel extends back through the front panel 6 of the baseball cap 2 and substantially beyond the margin of the diffuser sheet 40. The diffuser sheet 40 of Daniel does not contain the reflector 28. In contrast, Figs. 8A and 9 of the current application provide that when the baseplate 85 is attached to the diffuser 82, the reflector 84 is entirely enclosed within the assembly. This relationship of substantially entire enclosure is referred to in the present application by the term "contains", which in the present application, has its ordinary meaning. In this respect, the diffuser 40 of Daniel clearly does not 'contain' the reflector 28 as set forth in claim 19. Thus, in the present application, the enclosure or containment of the reflector allows the present indicator to be self-contained yet totally illuminated. The assembly of Daniel, conversely, is built into a baseball cap and neither achieves the advantages of the present invention nor is bound by the same functional and structural constraints.

In addition, other recited features of claim 19 are significant in the present invention in combination with the features of the preceding claims, because the present indicator is self-contained and is mounted on the outer surface of the helmet. For instance, the indicator advantageously does not intrude into the helmet, as discussed at page 2, lines 13-15 of Applicant's description. The light of Daniel, in contrast, is built into a baseball cap, which encloses the power supply components 56 behind its front panel 6 (Daniel, Fig. 3). Because of this structural difference, the relationship of the peripheral margins of the diffuser sheet and back reflector of Daniel to the surface of the baseball cap 2 into which the assembly intrudes is not structurally equivalent to the relationship of the peripheral margins of the diffuser and reflector of the present, self-contained indicator to the helmet on which it is mounted. For these reasons, therefore, claim 19 is believed to be patentably distinct from the proposed combination of Daniel with Chien and favorable consideration thereof is requested.

The above new independent and dependent claims are thus believed to be patentable over Chien alone or in combination with Daniel. Also, the other cited

references to Kotary, Dugmore, and Appiah do not appear to remedy the deficiencies of Chien and Daniel with respect to teaching and suggestion for each recited claim element, whereby Applicant respectfully requests favorable examination of the new claims. The remaining new claims 23-31 depend variously from the above claims, and provide further distinctions, whereby these claims are also believed to be in condition for allowance over the cited references, and consideration thereof is respectfully requested.

CONCLUSION

For at least the above reasons, the currently pending claims are believed to be in condition for allowance and notice thereof is requested.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Should any fees be due as a result of the filing of this response, the Commissioner is hereby authorized to charge the Deposit Account Number 06-0308, PABE200001.

Respectfully submitted,

FAY, SHARPE, FAGAN,
MINNICH & McKEE, LLP

8-2-06
Date

/Eric Highman/
Eric Highman
Reg. No. 43,672
1100 Superior Avenue
Seventh Floor
Cleveland, Ohio 44114-2579
216-861-5582